REMARKS

Favorable reconsideration and allowance of the present application are respectfully requested in view of the foregoing amendments and the following remarks.

Applicants respectfully thank Examiner Rhee for the courtesy she extended in the telephone interview with Attorney Tara Agnew on March 3, 2004, during which the Office Action was discussed and possible claim amendments were considered. Specific agreements concerning the claims were not reached during this telephone interview.

Claims 41-74 are currently pending, including independent claims 41, 57, 63, and 71. Claims 1-40 were previously cancelled. Claims 41, 57, 63, and 71 have been amended in this paper, while claims 75-76 have been cancelled in this paper.

Independent claim 41, for instance, is directed to a method for joining substrates comprising providing a first substrate and second substrate, each having an upper surface and a lower surface. A continuous thermoplastic tape is positioned adjacent to the first substrate and the second substrate such that the tape is in operative communication with the upper and lower surfaces of the first substrate and with the upper and lower surfaces of the second substrate. This continuous thermoplastic tape is capable of forming both an adhesive bond and a physical bond with the substrates. A seam is formed by bonding the continuous thermoplastic tape to the upper and lower surfaces of the first substrate and to the upper and lower surfaces of the second substrate, and this bonding between the tape and the substrates includes both "physical bonding" and "adhesive bonding."

In the Office Action, independent claims 41, 57, 63, and 71 (along with several of the dependent claims) were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,970,079 to Gaylord, Jr. Gaylord, Jr. is directed to a body support binder that is formed from serially arranged fabric panels whose ends are interconnected by strips of plastic material. The elongate body support binder of Gaylord, Jr. is effective at resisting rolling of the longitudinal side edges when worn by a user. (Col. 1, lines 28-46). Gaylord, Jr. describes its strips of plastic material that connect the fabric panels (i.e., strips 31, 32, 44, and 45 in Figures 1-6 and strips 60, 64, 65, 66, and 68 in Figures 7-13) as strips of plastic material that may be formed by a

conventional extrusion process and that may comprise any of a number of suitable thermoplastic materials, such as polyvinyl chloride. (Col. 2, lines 44-62).

Applicants respectfully submit that independent claims 41, 57, 63, and 71 are not anticipated by Gaylord, Jr. at least because Gaylord, Jr. does not teach the use of a continuous thermoplastic tape that is capable of forming both an adhesive bond and a physical bond with a substrate. Similarly, Gaylord, Jr. does not teach the presence of both adhesive bonding and physical bonding in a seam that joins two substrates (or fabrics) using a continuous thermoplastic tape, as required by all of Applicants' independent claims.

As discussed during the March 3, 2004 telephone interview, "adhesive bonding" is particularly defined in Applicants' specification as bonding that results from attractive forces between two or more materials (i.e., dipole-dipole forces, a type of van der Waals force, which occur upon the interaction of the dipole moments of two polar molecules). (Appl. p. 2, line 29 – p. 3, line 5; p. 10, lines 19-23). Such "adhesive bonding" is separate and distinct from "physical bonding," which is defined by Applicants as, for example, the physical intermingling of portions of the thermoplastic tape within the interstices of a substrate as a result of portions of the tape becoming relatively melt-flowable upon heating. (Appl. p. 3, lines 5-7; p. 10, line 24 – p. 11, line 8).

Because the seams formed according to Applicants' claimed invention include a combination of *both* adhesive bonding *and* physical bonding, such seams have excellent tensile strength in comparison to conventional seams, and this enhanced tensile strength is achieved without substantial adverse effects on other functional properties of the substrates (i.e., barrier properties). (Appl. p. 4, line 27 – p. 5, line 5; p. 10, lines 16-23). For instance, the combination of both adhesive bonding and physical bonding in the seams of Applicants' claims leads to an ability to effectively and strongly attach substrates without the necessity of conventional needle stitching (although needle stitching may be used in certain embodiments of Applicants' invention). (Appl. p. 11, lines 9-17). Thus, because the continuous thermoplastic tape of Applicants' presently claimed methods and articles is capable of *both* adhesive *and* physical

bonding, strong seams can be formed using most any type of substrate. (See Appl. p. 13, lines 24-26).

Further, using a continuous thermoplastic tape that is capable of forming *both* physical bonds *and* adhesive bonds with the substrates or fabrics it joins allows for the processing temperatures and/or pressures (when heat and/or pressure are used to form the seam) to be varied to favor one type of bonding over the other. For instance, a lower processing temperature could be utilized to produce a seam that bonds the tape to the substrates primarily through adhesive bonding, while a higher processing temperature could be utilized to increase the extent of the physical bonding between the thermoplastic tape and the substrates. (Appl. p. 11, line 26 – p. 12, line 8).

Similarly, using a continuous thermoplastic tape that is capable of forming *both* physical bonds *and* adhesive bonds with the substrates or fabrics it joins allows for the construction of the tape to be varied in order to control the extent of adhesive bonding and physical bonding present in the seam. For instance, using a multi-layer or multi-component tape comprising multiple thermoplastic materials would allow formation of a seam where certain portions of the tape bond to a substrate primarily through adhesive bonding, while other portions of the tape bond to a substrate primarily through physical bonding.

Additionally, using a thermoplastic tape capable of forming *both* adhesive *and* physical bonds with a substrate is useful in embodiments where the materials that form the first substrate are different from the materials that form the second substrate. In such situations, one substrate may be less "adhesively compatible" with the thermoplastic tape, while the other substrate may be less "physically compatible" with the tape because of differences in thermal melting points. Yet, in these situations, because the continuous thermoplastic tape of Applicants' claimed invention is capable of both adhesive and physical bonding, the tape can form bonds having excellent strength with *both* the substrates. (Appl. p. 12, line 24 – p. 13, line 26).

In contrast to Applicants' claimed invention, however, Gaylord, Jr. does not teach or in any way suggest that the strips of plastic material it uses to join the serially arranged panels of its thoracic support binder are capable of *both adhesively and*

physically bonding to those serially arranged panels. Similarly, when the fabric panels of Gaylord, Jr.'s thoracic support binder are joined, there is no teaching or suggestion that the panels are joined by a seam formed by bonding a continuous thermoplastic tape to the upper and lower surfaces of two substrates, *where that bonding includes a combination of both adhesive bonding and physical bonding*, as Applicants have defined the terms "adhesive bonding" and "physical bonding." Accordingly, for at least the reasons set forth above, Applicants respectfully submit that independent claims 41, 57, 63, and 71 patentably define over Gaylord, Jr.

Various dependent claims were rejected under either 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a) as being unpatentable over Gaylord, Jr. alone, or in view of U.S. Patent No. 4,410,575 to Obayashi, et al., the "eFunda" reference, the "Encyclopedia of Petroleum Products" reference, the "Lumicor" reference, U.S. Patent No. 5,003,902 to Benstock, et al., U.S. Patent No. 5,591,521 to Arakawa, et al., and/or U.S. Patent No. 6,096,420 to Wilhoit, et al. Applicants respectfully submit, however, that at least for the reasons indicated above relating to corresponding independent claims 41, 57, 63, and 71, the dependent claims patentably define over the cited references. However, Applicants also note that the patentability of such dependent claims does not necessarily hinge on the patentability of independent claims 41, 57, 63, and 71. In particular, some or all of these claims may possess features that are independently patentable, regardless of the patentability of claims 41, 57, 63, and 71.

In summary, Applicants respectfully submit that the present claims patentably define over all of the prior art of record for at least the reasons set forth above. As such, it is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. Examiner Rhee is invited and encouraged to telephone the undersigned, however, should any issues remain after consideration of this response.

Please charge any additional fees required by this Amendment to Deposit Account No. 04-1403.

Respectfully requested,

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